

RECEIVED

1644

MAR 05 2001

TECH CENTER 1600/2900

ENTERED

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/543,371

DATE: 02/22/2001
 TIME: 12:14:29

Input Set : A:\14401027005.txt
 Output Set: N:\CRF3\02222001\I543371.raw

4 <110> APPLICANT: Raghuram Kalluri.
 6 <120> TITLE OF INVENTION: ANTI-ANGIOGENIC PROTEINS AND FRAGMENTS
 7 AND METHODS OF USE THEREOF
 10 <130> FILE REFERENCE: 1440.1027-005
 12 <140> CURRENT APPLICATION NUMBER: US 09/543,371
 13 <141> CURRENT FILING DATE: 2000-04-04
 15 <150> PRIOR APPLICATION NUMBER: US 09/335,224
 16 <151> PRIOR FILING DATE: 1999-06-17
 18 <150> PRIOR APPLICATION NUMBER: US 60/089,689
 19 <151> PRIOR FILING DATE: 1998-06-17
 21 <150> PRIOR APPLICATION NUMBER: US 60/126,175
 22 <151> PRIOR FILING DATE: 1999-03-25
 24 <160> NUMBER OF SEQ ID NOS: 18
 26 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 28 <210> SEQ ID NO: 1
 29 <211> LENGTH: 690
 30 <212> TYPE: DNA
 31 <213> ORGANISM: Homo sapiens
 33 <220> FEATURE:
 34 <221> NAME/KEY: CDS /
 35 <222> LOCATION: (1)...(687)
 37 <400> SEQUENCE: 1
 38 tct gtt gat cac ggc ttc ctt gtg acc agg cat agt caa aca ata gat 48
 39 Ser Val Asp His Gly Phe Leu Val Thr Arg His Ser Gln Thr Ile Asp
 40 1 5 10 15
 42 gac cca cag tgt cct tct ggg acc aaa att ctt tac cac ggg tac tct 96
 43 Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
 44 20 25 30
 46 ttg ctc tac gtg caa ggc aat gaa cgg gcc cat gga cag gac ttg ggc 144
 47 Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu Gly
 48 35 40 45
 50 acg gcc ggc agc tgc ctg cgc aag ttc agc aca atg ccc ttc ctg ttc 192
 51 Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
 52 50 55 60
 54 tgc aat att aac aac gtg tgc aac ttt gca tca cga aat gac tac tgc 240
 55 Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
 56 65 70 75 80
 60 tac tgg ctg tcc acc cct gag ccc atg ccc atg tca atg gca ccc atc 288
 61 Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
 62 85 90 95
 64 acg ggg gaa aac ata aga cca ttt att agt agg tgt gct gtg tgt gag 336
 65 Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
 66 100 105 110
 68 gcg cct gcc atg gtg atg gcc gtg cac agc cag acc att cag atc cca 384
 69 Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Glu Ile Pro
 70 115 120 125
 72 ccg tgc ccc agc ggg tgg tcc tgc ctg tgg atc ggc tac tct ttt gtg 432

RAW SEQUENCE LISTING

DATE: 02/22/2001

PATENT APPLICATION: US/09/543,371

TIME: 12:14:29

Input Set : A:\14401027005.txt

Output Set: N:\CRF3\02222001\I543371.raw

RECEIVED

MAR 05 2001

TECH CENTER 1600/2900

```

73 Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
74      130      135      140
76 atg cac acc agc gct ggt gca gaa ggc tct qgc caa gcc ctg gcg tcc      480
77 Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
78 145      150      155      160
80 ccc ggc tcc tgc ctg gag gag ttt aga agt gcg cca ttc atc gag tgt      528
81 Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys
82      165      170      175
84 cac ggc cgt ggg acc tgc aat tac tac gca aac gct tac agc ttt tgg      576
85 His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
86      180      185      190
88 etc gcc acc ata gag agg agc gag atg ttc aag aag cct acg ccg tcc      624
89 Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser
90      195      200      205
92 acc ttg aag gca ggg gag ctg cgc acg cac gtc agc cgc tgc caa qtc      672
93 Thr Leu Lys Ala Gly Glu Leu Arg Thr His Val Ser Arg Cys Gln Val
94      210      215      220
96 tgt atg aga aga aca' taa      690
97 Cys Met Arg Arg Thr
98 225
101 <210> SEQ ID NO: 2
102 <211> LENGTH: 229
103 <212> TYPE: PRT
104 <213> ORGANISM: Homo sapiens
106 <400> SEQUENCE: 2
107 Ser Val Asp His Gly Phe Leu Val Thr Arg His Ser Gln Thr Ile Asp
108 1      5      10      15
109 Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
110      20      25      30
111 Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu Gly
112      35      40      45
113 Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
114      50      55      60
115 Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
116 65      70      75      80
117 Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
118      85      90      95
119 Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
120      100      105      110
121 Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro
122      115      120      125
123 Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
124      130      135      140
125 Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
126 145      150      155      160
127 Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys
128      165      170      175
129 His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
130      180      185      190

```

RAW SEQUENCE LISTING DATE: 02/22/2001
 PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
 Output Set: N:\CRF3\02222001\I543371.raw

RECEIVED

MAR 05 2001

TECH CENTER 1600/2900

```

131 Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser
132      195      200      205
133 Thr Leu Lys Ala Gly Glu Leu Arg Thr His Val Ser Arg Cys Gln Val
134      210      215      220
135 Cys Met Arg Arg Thr
136 225
139 <210> SEQ ID NO: 3
140 <211> LENGTH: 27
141 <212> TYPE: DNA
142 <213> ORGANISM: Artificial Sequence
144 <220> FEATURE:
145 <223> OTHER INFORMATION: pET22b(+) forward oligonucleotide primer for
146 Arresten
148 <400> SEQUENCE: 3
149 cgggacccctt ctgttgatca cggcttc
151 <210> SEQ ID NO: 4
152 <211> LENGTH: 27
153 <212> TYPE: DNA
154 <213> ORGANISM: Artificial Sequence
156 <220> FEATURE:
157 <223> OTHER INFORMATION: pET22b(+) reverse oligonucleotide primer for
158 Arresten
160 <400> SEQUENCE: 4
161 cccaagcttt gttcttctca tacagac
163 <210> SEQ ID NO: 5
164 <211> LENGTH: 684
165 <212> TYPE: DNA
166 <213> ORGANISM: Homo sapiens
168 <220> FEATURE:
169 <221> NAME/KEY: CDS
170 <222> LOCATION: (1)...(681)
172 <400> SEQUENCE: 5
173 gtc agc atc ggc tac ctc ctg gtg aag cac agc cag acg gac cag gag
174 Val Ser Ile Gly Tyr Leu Leu Val Lys His Ser Gln Thr Asp Gln Glu
175 1      5      10      15
178 ccc atg tgc ccg gtg ggc atg aac aaa ctc tgg agt gga tac agc ctg
179 Pro Met Cys Pro Val Gly Met Asn Lys Leu Trp Ser Gly Tyr Ser Leu
180      20      25      30
182 ctg tac ttc gag ggc cag gag aag gcg cac aac cag gac ctg ggg ctg
183 Leu Tyr Phe Glu Gly Gln Glu Lys Ala His Asn Gln Asp Leu Gly Leu
184      35      40      45
186 gcg ggc tcc tgc ctg gcg cgg ttc agc acc atg ccc ttc ctg tac tgc
187 Ala Gly Ser Cys Leu Ala Arg Phe Ser Thr Met Pro Phe Leu Tyr Cys
188      50      55      60
190 aac cct ggt gat gtc tgc tac tat gcc agc cgg aac gac aag tcc tac
191 Asn Pro Gly Asp Val Cys Tyr Tyr Ala Ser Arg Asn Asp Lys Ser Tyr
192 65      70      75      80
194 tgg ctc tct acc act gcg ccg ctg ccc atg atg ccc gtg gcc gag gac
195 Trp Leu Ser Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/543,371

DATE: 02/22/2001
 TIME: 12:14:29

Input Set : A:\14401027005.txt
 Output Set: N:\CRF3\02222001\I543371.raw

```

196      85      90      95
198 gag atc aag ccc tac atc agc cgc tgt tct gtg tgt gag gcc ccg gcc      336
199 Glu ile Lys Pro Tyr ile Ser Arg Cys Ser Val Cys Glu Ala Pro Ala
200      100      105      110
202 atc gcc atc qcg gtc cac agt cag gat gtc tcc atc cca cac tgc cca      384
203 ile Ala ile Ala Val His Ser Gln Asp Val Ser ile Pro His Cys Pro
204      115      120      125
206 gct ggg tgg cgg agt ttg tgg atc gga tat tcc ttc ctg atg cac acg      432
207 Ala Gly Trp Arg Ser Leu Trp ile Gly Tyr Ser Phe Leu Met His Thr
208      130      135      140
210 gcg gcg gga gac gaa ggc ggt ggc caa tca ctg gtg tca ccg ggc agc      480
211 Ala Ala Gly Asp Glu Gly Gly Gln Ser Leu Val Ser Pro Gly Ser
212 145      150      155      160
214 tgt cta gag gac ttc cgc gcc aca cca ttc atc gaa tgc aat gga ggc      528
215 Cys Leu Glu Asp Phe Arg Ala Thr Pro Phe ile Glu Cys Asn Gly Gly
216      165      170      175
218 cgc ggc acc tgc cac tac tac gcc aac aag tac agc ttc tgg ctg acc      576
219 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
220      180      185      190
222 acc att ccc gag cag agc ttc cag ggc tgc ccc tcc gcc gac acg ctg      624
223 Thr ile Pro Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu
224      195      200      205
226 aag gcc ggc ctg atc cgc aca cac atc agc cgc tgc cag gtg tgc atg      672
227 Lys Ala Gly Leu ile Arg Thr His ile Ser Arg Cys Gln Val Cys Met
228      210      215      220
230 aag aac ctg tga      684
231 Lys Asn Leu
232 225
235 <210> SEQ ID NO: 6
236 <211> LENGTH: 227
237 <212> TYPE: PRT
238 <213> ORGANISM: Homo sapiens
240 <400> SEQUENCE: 6
241 Val Ser ile Gly Tyr Leu Leu Val Lys His Ser Gln Thr Asp Gln Glu
242 1      5      10      15
243 Pro Met Cys Pro Val Gly Met Asn Lys Leu Trp Ser Gly Tyr Ser Leu
244      20      25      30
245 Leu Tyr Phe Glu Gly Gln Glu Lys Ala His Asn Gln Asp Leu Gly Leu
246      35      40      45
247 Ala Gly Ser Cys Leu Ala Arg Phe Ser Thr Met Pro Phe Leu Tyr Cys
248      50      55      60
249 Asn Pro Gly Asp Val Cys Tyr Tyr Ala Ser Arg Asn Asp Lys Ser Tyr
250 65      70      75      80
251 Trp Leu Ser Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp
252      85      90      95
253 Glu ile Lys Pro Tyr ile Ser Arg Cys Ser Val Cys Glu Ala Pro Ala
254      100      105      110
255 ile Ala ile Ala Val His Ser Gln Asp Val Ser ile Pro His Cys Pro
256      115      120      125

```

RAW SEQUENCE LISTING DATE: 02/22/2001
 PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
 Output Set: N:\CRF3\02222001\I543371.raw

```

257 Ala Gly Trp Arg Ser Leu Trp Ile Gly Tyr Ser Phe Leu Met His Thr
258      130      135      140
259 Ala Ala Gly Asp Glu Gly Gly Gln Ser Leu Val Ser Pro Gly Ser
260 145      150      155      160
261 Cys Leu Glu Asp Phe Arg Ala Thr Pro Phe Ile Glu Cys Asn Gly Gly
262      155      170      175
263 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
264      180      185      190
265 Thr Ile Pro Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu
266      195      200      205
267 Lys Ala Gly Leu Ile Arg Thr His Ile Ser Arg Cys Gln Val Cys Met
268      210      215      220
269 Lys Asn Leu
270 225
271 <210> SEQ ID NO: 7
272 <211> LENGTH: 27
273 <212> TYPE: DNA
274 <213> ORGANISM: Artificial Sequence
276 <220> FEATURE:
277 <223> OTHER INFORMATION: pET22b(+) forward oligonucleotide primer for
278      Canstatin
280 <400> SEQUENCE: 7
281 cgggatacctg tcagcatcgg ctacctc
283 <210> SEQ ID NO: 8
284 <211> LENGTH: 27
285 <212> TYPE: DNA
286 <213> ORGANISM: Artificial Sequence
288 <220> FEATURE:
289 <223> OTHER INFORMATION: pET22b(+) reverse oligonucleotide primer for
290      Canstatin
292 <400> SEQUENCE: 8
293 cccaagcttc aggttcttca tgcacac
295 <210> SEQ ID NO: 9
296 <211> LENGTH: 738
297 <212> TYPE: DNA
298 <213> ORGANISM: Homo sapiens
300 <220> FEATURE:
301 <221> NAME/KEY: CDS
302 <222> LOCATION: (4)...(735)
304 <221> NAME/KEY: misc_feature
305 <222> LOCATION: (160)...(735)
306 <223> OTHER INFORMATION: Tumstatin N53
308 <221> NAME/KEY: misc_feature
309 <222> LOCATION: (4)...(375)
310 <223> OTHER INFORMATION: Tumstatin 333
312 <221> NAME/KEY: misc_feature
313 <222> LOCATION: (376)...(735)
314 <223> OTHER INFORMATION: Tumstatin 334
316 <400> SEQUENCE: 9

```

VERIFICATION SUMMARY DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:30

Input Set : A:\14401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw